Utilization Payload Processing by KSC

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6-20-02

KSC Roles in ISS Utilization

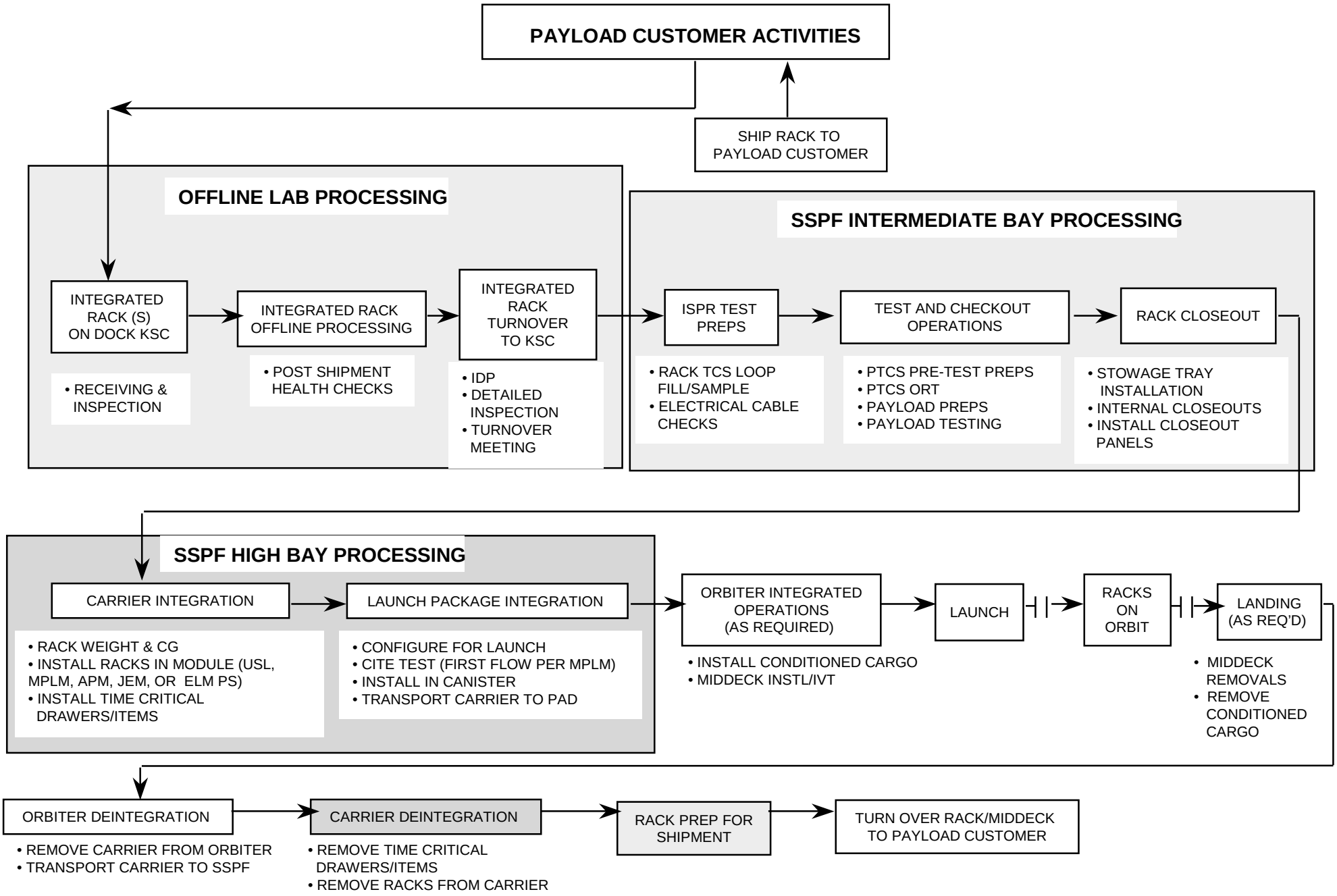
- Designed, developed, activated and validated Ground Support Equipment to support payload checkout at KSC (e.g. Payload Test and Checkout System (PTCS));
- Perform ISS Payload Processing activities at KSC and the landing site;
  - Limited physical integration of ISS Payloads;
  - Performance of Payload-to-ISS final functional checkout for US Payloads (rack/attached payloads) operating in the US Lab, International Partner (IP) Labs, the Truss, or IP Exposed Facilities;
  - Middeck Experiment Processing.
- Operation and Maintenance and Sustaining Engineering of selected Ground Support Equipment.
- Engineering consultation and analysis for ISS Payloads
  - Processing Planning
  - Requirements Assessment

Specialized Science Support

- On-site science laboratory support for:
  - Experiment Hardware and sample/specimen preparation for flight and post-flight sample processing;
  - Flight Simulation Testing and Flight Operations Support for Science Payloads;
  - Synchronous/non-synchronous ground control studies for Science Payloads.
- In addition to the specialized science laboratories, KSC maintains an accredited animal care facility for mammalian and aquatic husbandry, testing, flight preparation, and post-flight sample processing.
- Upon completion of the Space Experiment Research and Processing Laboratory (SERPL) these activities will move out of Hangar L into SERPL. SERPL will house more than two dozen distinct laboratories and will be clustered by scientific disciplines to enable a broad range of investigations both in space, and on the ground, into areas such as: Biotechnology, Biomedicine, Effects and uses of Microgravity, Space Agriculture, Microbial Ecology, and Conservation Biology.
- For more exciting info on this topic, go to http://researchpark.ksc.nasa.gov/serpl/facts.htm

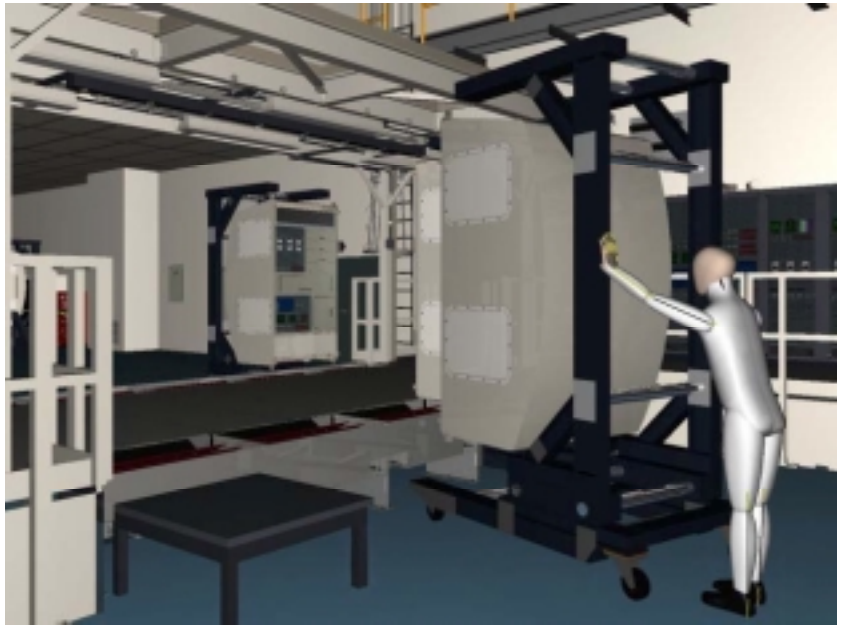
SPACE STATION PAYLOADS
FACILITY CLASS PAYLOAD RACK

PRELIMINARY



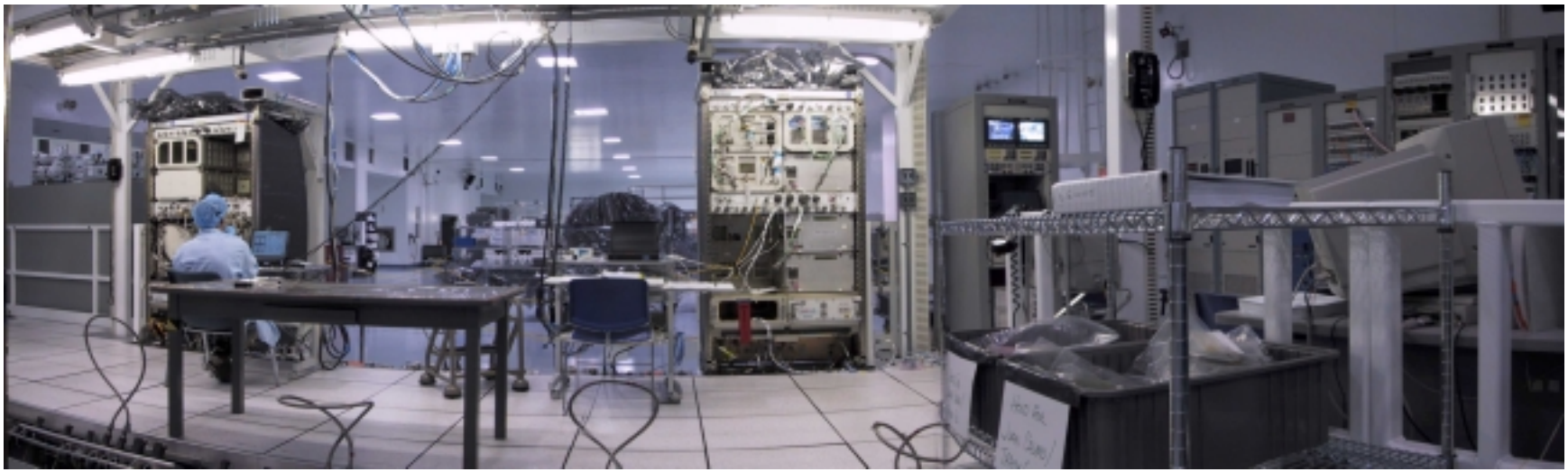
Standard KSC Ground Processing Flow for ISS Payload Rack

Physical Integration of Hardware into Flight Rack (as required)



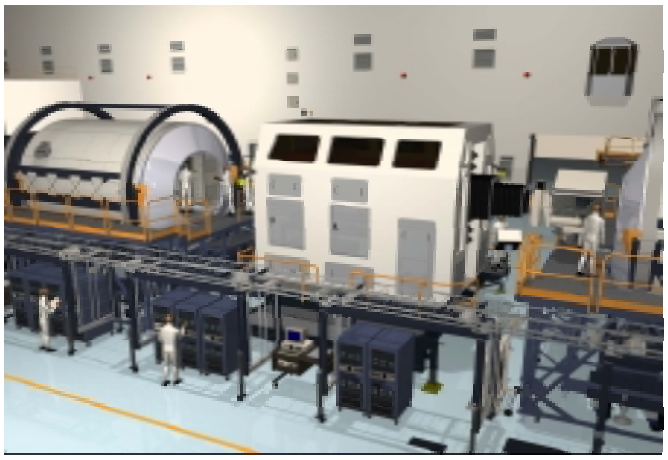
Installation of integrated rack into Payload Test and Checkout System for Payload-to-ISS Final Interface Checkout

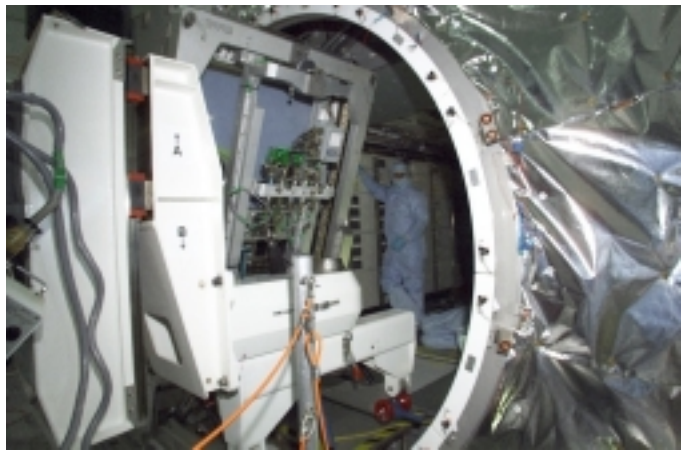
Standard KSC Ground Processing Flow for ISS Payload Rack



Final Checkout of Payload-to-ISS Interfaces with the Payload Test and Checkout System (PTCS)

Standard KSC Ground Processing Flow for ISS Payload Rack



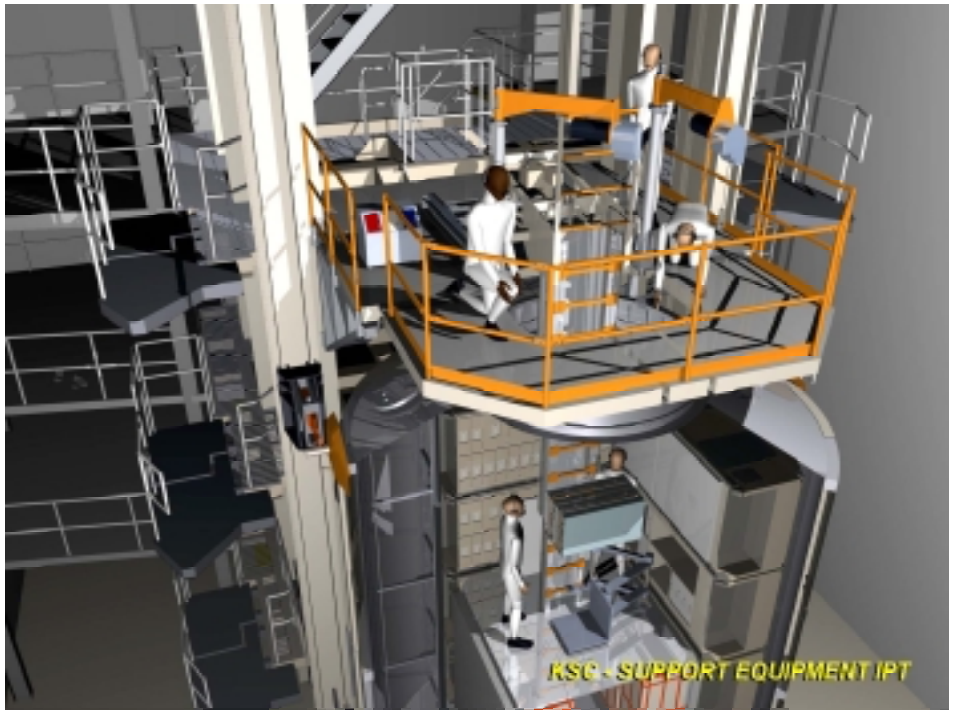


Installation of ISS Payload Rack into Multi-Purpose Logistics Module (MPLM) using the KSC Rack Insertion Device (RID)

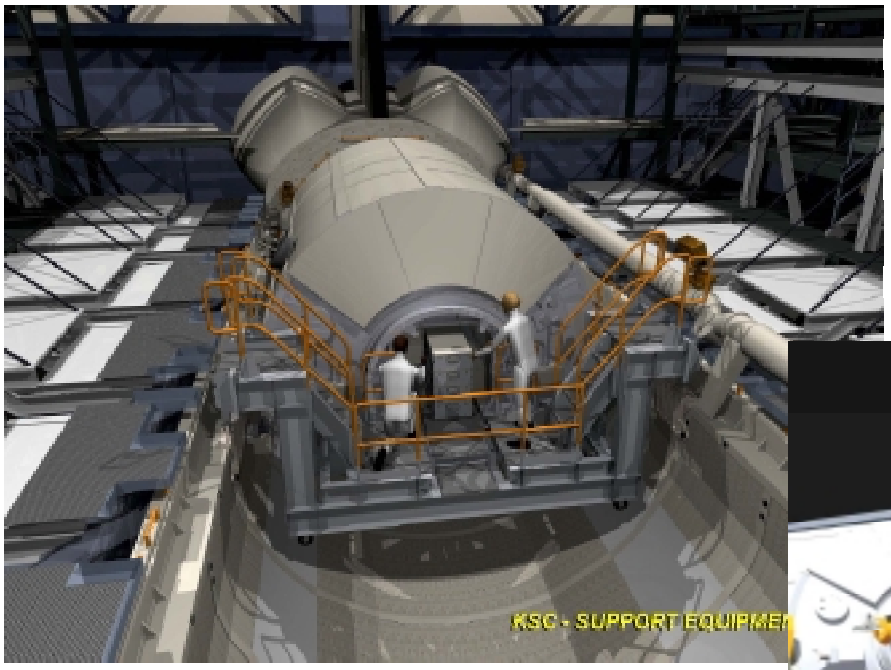
Standard KSC Ground Processing Flow for ISS Payload Rack

- MPLM is transferred to the Shuttle Pad via the Payload Canister/Transporter.

Late access to the MPLM is performed using KSC-developed PLM Late Access Kit (PLAK) for installation of time-critical payload samples and stowage.



Standard KSC Ground Processing Flow for ISS Payload Rack



For KSC shuttle landings, post-flight access to the MPLM for removal of time critical specimens/samples is performed in the Orbiter Processing Facility.

For DFRC landings, post-flight access to the MPLM for removal of time critical specimens/samples is performed at the Mate/Demate Device using the Dryden Early Access Platform (DEAP).